



NATIONAL COLLOQUIUM ON URBAN RESILIENCE

1 & 2 August 2012
Summary Report



Background

The first National Colloquium on Urban Resilience was jointly hosted by the University of Pretoria and the CSIR to develop a shared understanding of the meaning of urban resilience and create a national community of practice.

Academics from the major South African Universities and research councils, as well as stakeholders in government and the private sector gathered in Pretoria to discuss five questions:

- What is urban resilience?
- How do we apply the concepts of resilience in cities?
- Can we predict or determine urban resilience?
- Should we promote urban resilience?
- Will urban resilience look different in a developing world context?

What is urban resilience?

Urban resilience is seen as the ability of the city to continue providing key functions in the face of both disasters (pulse disturbances) and slow pressures arising from social, economic and/or environmental conditions (press disturbances).

This ability depends on more than the mere existence of conditions that enable survival and recovery, but require a synergy between the adaptive capacity of the various systems that constitute the city as well as transformative urban design and development processes.

The understanding of urban resilience that is thus adopted is one of a dynamic evolutionary process which embraces change and transformation as mechanisms to maintain and strengthen the city's ability to continue providing key functions.

Resilience further cannot be confined to only the life supporting aspects of nature, but should include society and its systems.

Applying resilience theory to the city

To apply resilience theory to cities, it is necessary to understand how concepts such as the adaptive cycle, multiple stability regimes, functional and response diversity, and cross-scale and cross-system interactions play out in the social ecological system and how they respond to internal and external perturbations over time. This requires an understanding of the interdependencies of the various systems and subsystems that constitute the city, the areas of risk and vulnerability, critical thresholds in the system and the main stressors.

In applying urban resilience, cities should be considered as living ecosystems made up of smaller organisms that all need access to resources and produce waste. An ecosystem is resilient because it makes best use of what is locally available, re-uses waste and expands the minimum amount of energy to meet its needs. In pursuing resilience cities should endeavour to do the same.

Interventions aimed at strengthening urban resilience should increase stability and adaptive capacity and promote the renewal of various biophysical, social and technical networks. A pragmatic approach would be to focus on smaller, clearly definable sub-systems within cities rather than viewing the city as a whole. Localized, contextually relevant and regenerative interventions and a loosely connected modular structure will further improve resilience at the various scales of the city.

Another critical component of a resilience strategy would be transforming and enhancing the systems and institutions of governance, and increasing the adaptive capacity of these institutions.



Can we determine or predict urban resilience?

Resilience is seen as an emergent property of the interactions between different elements in the urban system. These interactions lead to continuous and complex changes. Different changes and events at different scales (building, neighbourhood and city) have a continuous influence on each other that makes exact predictions impossible. Therefore, perhaps the right approach to resilience in cities is not about predicting single events and putting up protection against them, but rather diversifying preparedness in anticipation and acceptance of the unknown. This is called building adaptive capacity.

While there are certain system characteristics that can make resilience more likely, this does not necessarily mean that one can predict whether these characteristics will make a city resilient to all changes or even specific events. It may, however, be possible to predict conditions that can influence urban resilience such as unemployment, levels of service delivery, degradation of ecosystem services and crime to name a few. These conditions can be monitored through a systems approach that is informed by, for example:

- Monitoring and valuing ecosystem services
- Social network assessments
- Infrastructure assessments
- Mapping critical thresholds/tipping points in the system

It may also be possible to develop indicators that measure aspects of resilience such as functional and response diversity, capacity to resist, adapt to or facilitate change, or the existence of enabling conditions that can rebuild urban systems after disasters. Furthermore both systems dynamics models and agent-based or complex adaptive systems modelling can be used to explore the possible outcomes of various intended and unintended changes on the city.

Will urban resilience look different in a developing world context?

Yes and no. The principles of resilience will remain exactly the same, but the outcomes of urban resilience will differ in each context, and urban resilience will not only look different in every city in the world; it will even look different within single cities. Developing world cities need to deal with more rapid change at increasing scales, and greater levels of disparity, different change agents and differentiating demands. While these conditions create unique challenges for building resilience, they also present an opportunity. Developing world cities are less invested in old ways of doing and can use their relative lack of fixed investment as an opportunity to design cities differently and innovate.



Should urban resilience be promoted?

Yes. Simply put, resilience protects the development gain. However, urban resilience should be promoted as a proactive future- vision – as a paradigm shift based on awareness of the city as a complex, adaptive social-ecological system, not as a response to a sudden shock. Urban resilience should also be used as a way of transforming the urban system to a better place, moving it from negative to positive impacts.

But this should be done with the awareness that resilience by itself is a neutral concept and that systems can also exhibit perverse resilience. The focus should therefore be on enhancing the transformative capacity of urban systems, and not the persistence of resilient but perhaps perverse system states.

Conclusions

While there is still considerable vagueness around what resilience thinking is and how it can be applied to an urban system, there was general consensus that it is a valuable way of engaging with the problems of urban development and informing interventions and future development strategies for the city.

It provides a hopeful perspective on the challenges presented by global change to urban development and management, and enables stakeholders in the city to engage with the complexities brought about by unpredictable perturbations and change to create the conditions for a thriving, abundant and healthy urban environment.

Participants

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TASK TEAM ON RESILIENT URBAN SYSTEMS IN TRANSITION